Center Innovation Fund: GSFC CIF

Graphene based Photonics Devices for Remote Sensing Applications

Completed Technology Project (2012 - 2012)

Project Introduction

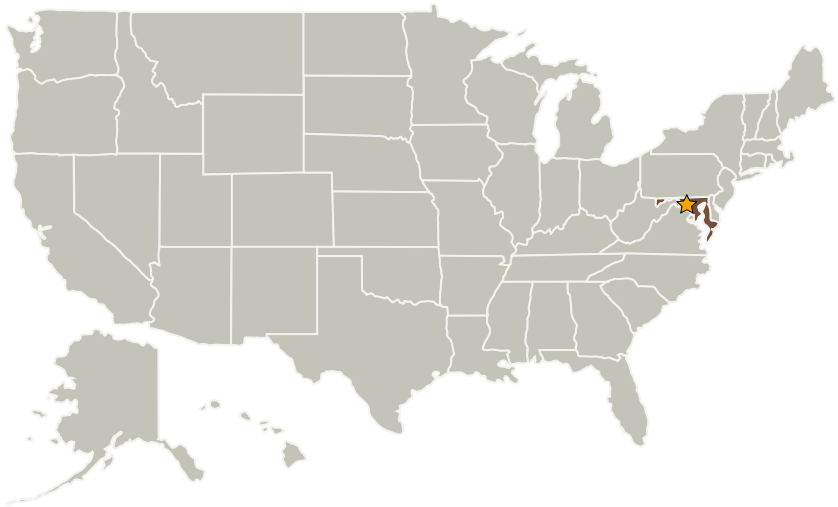
Fabrication of large area monolayer and multi-layer graphene samples of optical quality for mode locking process. Develop toolsets to realize the laser ranging instrument. Using graphene as a mean to generate mode locked laser pulses. Demonstrate mode locking process using graphene as saturable absorber.

Develop scalable graphene-based bolometer technology. Use low pressure chemical vapor deposition (LPCVD) technique to grow large area graphene. Develop a process to make saturable absorber with single layer, as well as multilayer graphene. Test and characterize graphene samples with in-house developed laser transmitter.

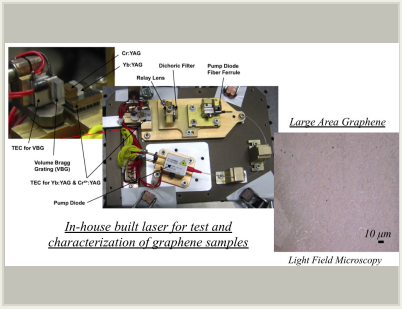
Anticipated Benefits

N/A

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland



Graphene based Photonics Devices for Remote Sensing Applications

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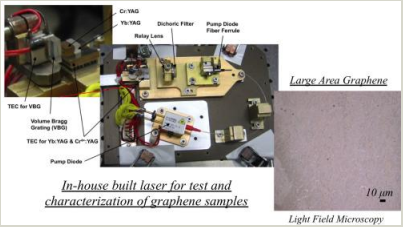
Graphene based Photonics Devices for Remote Sensing Applications

Completed Technology Project (2012 - 2012)

Primary U.S. Work Locations

Maryland

Images



5259.jpg
Graphene based Photonics Devices for Remote Sensing Applications
(https://techport.nasa.gov/image/1328)

Project Website:

http://sciences.gsfc.nasa.gov/sed/

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Innovation Fund: GSFC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

Peter M Hughes

Project Manager:

Terence A Doiron

Co-Investigators:

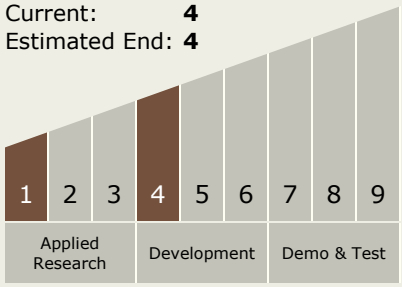
Mary J Li
Mahmooda Sultana
Amil A Patel

Graphene based Photonics Devices for Remote Sensing Applications

Completed Technology Project (2012 - 2012)

Technology Maturity (TRL)

Start: **1**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers